Adaptec Ultra Wireless™ Access Point

User's Guide

adaptec®

Adaptec Technical Support

If you have questions about installing or using your Adaptec product, check this document first—you will find answers to most of your questions here. If you need further assistance, use the support options listed below.

Technical Support Identification (TSID) Number

- Before contacting Technical Support, you need your unique 12-digit TSID number. The TSID number identifies your product and support status.
- The TSID number is included on two white, bar-coded labels, like the example below.

Support Options

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- To order Adaptec products, including accessories and cables, call +1 408-957-7274. Or, you can order cables online at www.adaptec.com/buy-cables.

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  For support via e-mail, submit your question to Adaptec's Technical Support Specialists at ask-de.adaptec.com.
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WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

■ Reorient or relocate the receiving antenna.
■ Increase the separation between equipment and receiver.
■ Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
■ Consult the dealer or an experienced radio/television technician for help.

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void your authority to operate the equipment.

Adaptec, Inc.	AWN-8060
FC Tested to Comply With FCC Standards	
FOR HOME OR OFFICE USE	

Federal Communications Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Canadian Compliance Statement

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

In this Guide

Introduction

This *User's Guide* provides detailed instructions for installing and configuring your Wireless Access Point (Wireless AP) as part of a Wireless Local Area Network (WLAN). See the *Installation Task List on page 3* for an overview of the installation process.

This *Guide* also includes a basic overview of wireless and LAN technology (see page 30) suitable for novice users. It assumes you have a working knowledge of your computer and are familiar with the Windows operating system.

> **Note:** Your Wireless AP is only one element of your WLAN. Installing this product alone will not create a wireless network. See *About Wireless Technology and LANs* on page 30 for information on the minimum requirements for creating a WLAN.

Kit Contents

Your Adaptec Ultra Wireless Access Point kit includes:

- Adaptec Ultra Wireless Access Point (AWN-8060)
- Ethernet straight-through cable
- AC Power adapter
- Ultra Wireless Access Point CD, which contains documentation and the Adaptec Wireless Access Point Utility
- *Adaptec Ultra Wireless Access Point Quick Start Guide*

System Requirements

To use your Wireless AP, you need a PC-compatible computer with:

- Pentium-class 90MHz (or faster) processor
- Microsoft Windows® 98SE, Windows Me®, Windows 2000®, or Windows XP®
- CD-ROM drive

Installation Task List

To successfully install your Wireless AP, complete these tasks:

❏ Follow the tips and suggestions provided in the next section, *Before You Begin*.

❏ Install the Wireless AP. See page 6.

❏ Install the Wireless Access Point Utility. See page 8.

❏ Set the IP address for your Wireless AP. See page 12.

❏ Open and log on to the Utility. See page 13.

❏ Connect to the WLAN. See page 14.

Installation takes approximately twenty minutes to complete.

Before You Begin

Review the features of your Wireless AP in *This is Your Wireless Access Point* on page 4.

If you are unfamiliar with wireless technology or Local Area Networks (LANs), read *About Wireless Technology and LANs* on page 30 for a basic overview.

If you have any non-Adaptec brand Wireless products on your WLAN, or if you have changed the default settings of your other Adaptec Wireless products, you'll find it easier to complete the Installation Checklist if you have this information available before you begin:

■ Wireless Network ID (or SSID)

■ Encryption settings

■ Security authentication settings

■ Preamble type

⚠ **Caution:** Install your Wireless AP as far away as possible from potential sources of interference, such as microwave ovens, 2.4 GHz wireless telephones, baby monitors, and so on.

# This is Your Wireless Access Point

Top View

The top of your Wireless AP has four clearly labeled status indicator lights (or *LEDs*). Once your Wireless AP is installed, these LEDs display the status of the network and the condition of your Wireless AP, as described:

LED	On	Off	Blinking
DIAG			Updating firmware.
LAN	LAN connection is made.	Problem with LAN connection.	Data is being transmitted on LAN.
Wireless	Ready to receive Wireless connections.	Problem with WLAN.	Data is being transmitted on WLAN.
Power	Device is on.	Device is off.	-

Side View

Side View

DC-IN port   LAN port   INIT button
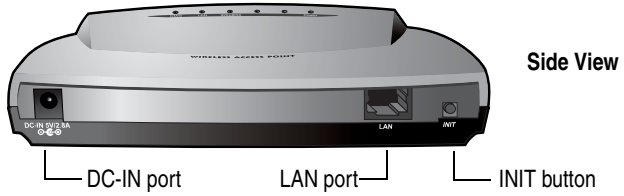
The DC-IN port connects your Wireless AP to a power source.

The LAN port connects your Wireless AP to your LAN.

The INIT button reboots your Wireless AP and resets it to its factory default settings. (Press and hold the INIT button for 5 seconds to reset.)

Installing Your Wireless AP

Before continuing, ensure that you have followed the tips and suggestions provided in *Before You Begin* on page 3.

The next task on the Installation Task List (see page 3) is to install your Wireless AP. This section helps you locate it in the best possible position and guides you through the installation process.

Locating Your Wireless AP

For maximum performance, install your Wireless AP in the center of your network, in a place that has a line of sight to all the devices connecting to it. Keep it as far away as possible from potential sources of interference, such as microwave ovens, 2.4 GHz wireless telephones, baby monitors and other wireless devices.

Note: The higher you place your Wireless AP, the better the signal coverage will be, especially if you have WLAN stations upstairs from your Wireless AP.

Installing the Wireless AP

Your Wireless AP can fit into your WLAN in multiple ways. It can be connected to a hub or switch on your network, a router on your network, or a network adapter that's installed in a computer on your network.

To install the Wireless AP:

1 Use the mounting screws to secure the Access Point in place, if desired.

2 Connect the Ethernet cable to the LAN port on the Access Point.

Step 4:
Connect power.

Step 2:
Connect LAN.

3 Depending on your network configuration, connect the other end of the Ethernet cable to the LAN port on:

- ■ a hub or switch on your network.

- ■ a router on your network.

- ■ a network card installed in another computer on your network.

4 Connect the power adapter to the DC-IN port on the Access Point (as shown in Step 2 on page 7), and plug it into a power outlet.

5 Raise the Access Point's antennas.

Your Wireless AP is installed. See *Installing the Wireless Access Point Utility* on page 8 to continue with your next Installation task.

Installing the Wireless Access Point Utility

Before you continue, make sure that you have:

❏ Followed the tips and suggestions provided in *Before You Begin on page 3*.

❏ Installed the Wireless AP. See page 6.

The next step on the Installation Task List (see page 3) is to install the Adaptec Wireless Access Point Utility, a tool that helps you set up and monitor your Wireless AP.

To install the Wireless Access Point Utility:

**1** Insert the Ultra Wireless Access Point CD into your CD-ROM drive.

Note: Adaptec recommends that you install the Wireless Access Point Utility and manage your Wireless AP on a computer that is wired to your Wireless AP through a network hub, switch, or router.

2 In the Windows **Start** menu, click **Run**.

3 Click **Browse**, and browse to your CD-ROM drive.

4 Double-click **setup.exe**.

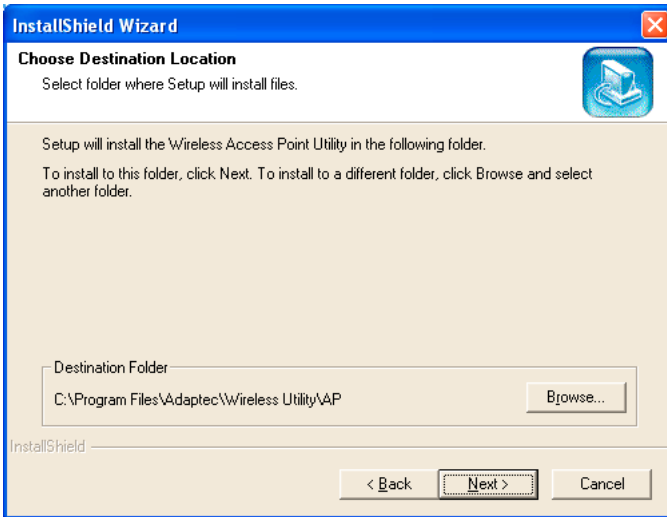The InstallShield Wizard opens.

5 Click **Next**.
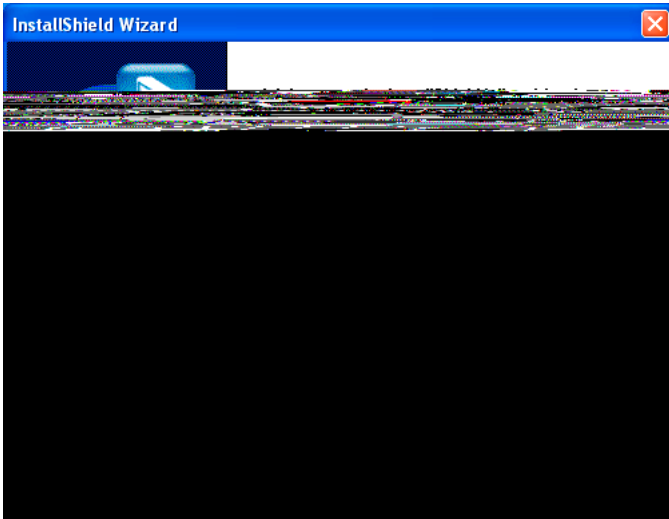
6 Type in your User Name and Company Name (optional), then click **Next**.

7 The InstallShield Wizard chooses a default destination folder for the software files. Click **Next** to accept the default destination (recommended), or click **Browse** to select an alternate destination.

8 You can choose where to store program icons in the Program Folder. Accept the default folder name, type a new folder name, or select one from the Existing Folders list. Click **Next**.
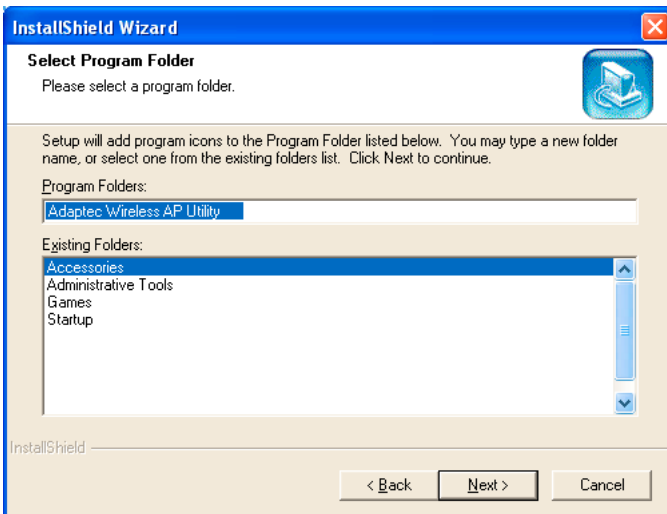
9 Click **Finish** to complete the installation.

The Wireless Access Point Utility is installed. The Wireless Access Point Utility icon appears on your desktop. See *Setting Your Wireless AP's IP Address* on page 12 to continue.

Setting Your Wireless AP's IP Address

Before you continue, make sure that you have:

❏ Followed the tips and suggestions provided in *Before You Begin on page 3*.

❏ Installed the Wireless AP. See page 6.

❏ Installed the Wireless Access Point Utility. See page 8.

The next step on the Installation Task List (see page 3) is to set the IP address for your Wireless AP.

You must set the IP address for your Wireless AP if you have just installed your Wireless AP, upgraded the firmware, or reset the Wireless AP using its INIT button or the Reset button in the Wireless Access Point Utility. You may also need to set the IP address if you are having trouble connecting to the WLAN.

To set the IP address:

1 Double-click the **Wireless Access Point Utility** icon on your desktop (shown at right), or open the program using the Windows **Start** menu.

The Utility opens and begins to search for active Adaptec APs.
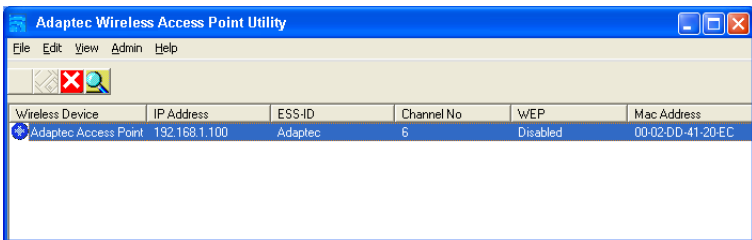
2 Select your Wireless AP, then click **Admin** and select **Set IP Address**.

3 Click **OK**, then click **Exit**.

The IP address is set. See *Opening the Utility and Logging on* on page 13 to continue.

Opening the Utility and Logging on

Before you continue, make sure that you have:

❏ Followed the tips and suggestions provided in *Before You Begin on page 3*.

❏ Installed the Wireless AP. See page 6.

❏ Installed the Wireless Access Point Utility. See page 8.

❏ Set the IP address for your Wireless AP. See page 12.

The next step on the Installation Task List (see page 3) is to log on to the Wireless Access Point Utility.

To log on to your Wireless AP:

1 Double-click the Wireless Access Point Utility icon on your desktop, or open the program using the Windows Start menu.

The Utility opens and begins to search for active Adaptec Access Points.

> **Note:** If your Wireless AP is not listed in the Utility and you are running the Utility on a Wireless network station, try connecting your station to the same *wired* network as your Wireless AP.

2 Double-click the Wireless AP.

3 In the User Name box, type admin.

4 By default, no password is set. (See *Changing the Administration Password* on page 26 for instructions on setting or changing the Password.) However, if you set a password during a previous session, enter it now.

5 Click **OK**.

You are logged on to the Utility. See *Connecting to the WLAN* on page 14 to continue.

Connecting to the WLAN

Before you continue, make sure that you have:

❏ Followed the tips and suggestions provided in *Before You Begin on page 3*.

❏ Installed the Wireless AP. See page 6.

❏ Installed the Wireless Access Point Utility. See page 8.

❏ Set the IP address for your Wireless AP. See page 12.

❏ Opened and logged on to the Utility. See page 13.

The next step on the Installation Task List (see page 3) is to connect your Wireless AP to your WLAN. Follow the instructions for your specific WLAN set-up:

■ If you are setting up a new WLAN using *only* Adaptec Wireless products, see *Using Only Adaptec Wireless Products* below.

■ If you are adding your Wireless AP to an existing WLAN or creating a new WLAN using non-Adaptec brand Wireless products, see page 15.

Using *Only* Adaptec Wireless Products

You have completed the Installation Task List. (Adaptec Wireless products are preset to work together on a WLAN.)

See *Checking Your Wireless Connections* on page 18 for more information on using your Wireless AP.

Adding to an Existing WLAN <u>or</u> Using Your Wireless AP With Non-Adaptec Brand Wireless Devices

You must adjust the default settings on your Wireless AP to allow it to function properly within your WLAN. These specific settings must be identical with those of every other Wireless device on your WLAN:
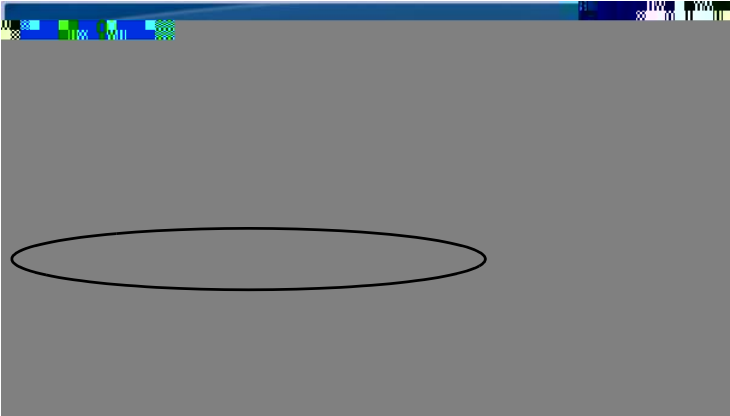
■ Wireless Network ID (SSID)

■ Encryption Settings

■ Security Authentication

Note: If you are creating a new WLAN, configure your Wireless AP first, then use identical settings on your Wireless network devices. If you are adding your Wireless AP to an existing WLAN, configure your Wireless AP to match the other Wireless network devices.

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To change these settings on your Wireless AP:

1 Log on to your Wireless AP.

2 Click the **Basic Set-up** tab.

a Set the **Wireless Network ID (SSID)**.

If you are adding your Wireless AP to an existing WLAN, set the SSID to match your other Wireless network devices.

Each station on your WLAN must have the same SSID.

b Click **Save**.

A message tells you that the new settings are saved. Although you can choose to reboot now (by clicking the **Reboot** button), continue with and reboot at the end of this task.

3 Click the **Security** tab.

The Enable WEP Encryption setting is deselected by default. Adaptec recommends that you protect your network by enabling WEP encryption. Unprotected networks are vulnerable to security breaches by unauthorized users.

a Set the Enable WEP Encryption and WEP Key settings as desired. (See *Changing the WEP Encryption Settings* on page 22 for more information.)

If you are adding your Wireless AP to an existing WLAN, set WEP Encryption to match your other Wireless network devices.

Each station on your WLAN must have the same WEP Encryption settings.

b If you selected Enable WEP Encryption, set **Security Authentication Type** to **Both**. (See *About Security Authentication Settings* on page 24 for more information.)

> **Note:** The Security page also lets you set MAC address filtering. For more information, see *Filtering MAC Addresses* on page 25.

4 Click **Save**.

Your changes are saved.

5 Click **Reboot** on the Success page. (You do not need to reboot your computer.)

You have completed the Installation Task List.

For more information on customizing your WLAN, see *Changing the Set-up of Your WLAN* on page 20.

Checking Your Wireless Connections

Once your Wireless AP is properly set up, you can view which Wireless devices are connected to it at any time.

To check current connections:

1 Open the Wireless Access Point Utility and log on. (See page 12.)

2 Click the **Connections** tab.

The *Media Access Control* (MAC) address of each Wireless device currently connected to your Wireless AP is listed. (See *Filtering MAC Addresses* on page 25 for more information about MAC addresses.)

3 Click **Refresh** to see the most up-to-date list.

Using the Wireless Access Point Utility

This section provides an introduction to the basic functions of the Wireless Access Point Utility. (See the next sections of this *User's Guide* for detailed information about specific features of the Utility.)

■ Click **Save** to save any changes you make on a page. Saved changes don't take effect until you reboot your Wireless AP.

■ Click **Reboot** to reboot your Wireless AP. (Rebooting happens within seconds and does not cause your computer to reboot.)

The Reboot button appears in two places: in the Success window that appears after you click **Save**, and on the Administration page. (See *Rebooting Your Wireless AP* on page 27 for more information.)

■ Click **Refresh** to view your Wireless AP's most up-to-date information, including any recent setting changes.

> **Note:** Remember, setting changes don't take effect until you reboot your Wireless AP.

■ Click **Reset** on the Administration page to change all Wireless AP settings back to the default values. (You can also reset your Wireless AP to its default settings by pressing and holding the INIT button on the device for 5 seconds.)

■ Click **Help** for on-screen assistance with the Wireless Access Point Utility.

Changing the Set-up of Your WLAN

You can use the Wireless Access Point Utility[1] to change the set-up of your WLAN by:

- Changing the transfer rate. See page 21.

- Changing the encryption (WEP) settings. See page 22.

- Limiting access to your Wireless AP by filtering MAC addresses. See page 25.

- Changing the Administration password. See page 26.

> **Note:** Adaptec recommends that you manage your Wireless AP from a computer that is *physically* connected to your Wireless AP through a network hub, switch, or router, not connected over the Wireless network. It is better to manage your Wireless AP from a *wired* connection.

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[1] You can also use a web browser to make these changes if you know the IP address of your Wireless AP.

Changing the Transfer Rate

The default transfer rate setting, *Automatic*, allows your Wireless AP to automatically adjust its transfer speed for optimal performance and the longest operating range. Adaptec recommends that whenever possible, you maintain the Automatic setting.

However, if your Wireless AP's transfer rate changes frequently, you can set a lower transfer rate to achieve a more stable connection. The fixed rate speed options are 11 Megabits per second (Mbps), 5.5 Mbps, 2 Mbps, or 1 Mbps.

To change the transfer rate for your Wireless AP:

1 Open the Wireless Access Point Utility and log on. (See page 12.)

2 Click the **Basic Set-up** tab.

3 In the **Transfer Rate** drop-down box, select the rate you want.

4 Click **Save**.

Your changes are saved. You must reboot your Wireless AP to apply your changes. Click **Reboot** on the Success page, or continue working in the Wireless Access Point Utility and click Reboot from the Administration page (see page 27) at the end of your session. You do not have to reboot your computer.

Changing the WEP Encryption Settings

Wired Equivalent Privacy (WEP) is a security feature that encrypts the data being sent over the radio waves of your WLAN.

The default Enable WEP Encryption setting is *Disabled*. Disabled encryption allows your Wireless devices to share data in plain text.

⚠️ **Caution:** Adaptec *strongly* recommends that you protect your network by enabling WEP encryption. Unprotected networks are vulnerable to security breaches from unauthorized users.

Setting **64-Bit** or **128-Bit** encryption increases data security by limiting network access through specified Wireless stations only, although it may slow data transmission.

Set the level of security you require for your WLAN. For all the computers on your WLAN to communicate with each other and share data, they must have identical *WEP Key* settings. (WEP Keys control encryption; the Default Key determines which of the four WEP Keys are used for encryption and decryption.)

WEP keys can be numeric, alphabetic, or a combination of both. You can choose between Hexadecimal, which restricts you to numbers 0–9 and letters A–F, and Alphanumeric, which restricts you to numbers 0–9 and letters a–z/A–Z.

📝 **Note:** If you are setting up a new WLAN, you can use the Wireless Access Point Utility to create WEP keys and set a *default key*. See *Setting New WEP Keys* on page 23 below for more information.

To change the encryption setting of your Wireless AP:

1 Open the Wireless Access Point Utility and log on. (See page 12.)

2 Click the **Security** tab.

The Security page opens, as shown on page 17.

3 To enable encryption, select **Enable WEP Encryption.** Then continue with Step 4.

To disable encryption, deselect **Enable WEP Encryption**, then click **Save**. Click **Reboot** on the Success page when prompted.

4 In the WEP Key Length drop-down box, choose **64-bit key** or **128-bit key**.

Type in the WEP Keys and Default Key used on your WLAN. Ensure that they *exactly* match your WLAN WEP Keys. Remember that alphanumeric WEP keys are case-sensitive.

5 Click **Save**.

Your changes are saved. You must reboot your Wireless AP to apply your changes. Click **Reboot** on the Success page, or continue working in the Wireless Access Point Utility and click Reboot from the Administration page (see page 27) at the end of your session. You do not have to reboot your computer.

Setting New WEP Keys

You can set new WEP keys two different ways:

■ Adaptec recommends that you create the keys manually if you are adding your Wireless AP to an existing WLAN or have any non-Adaptec brand devices on your WLAN. Go to *Creating Keys Manually* to continue.

■ If you are setting up a new WLAN and have *only Adaptec brand products* on your WLAN, you can create a passphrase that automatically generates the required keys and sets a default key. Go to *Creating Keys With a Passphrase* on page 24 to continue.

Creating Keys Manually

1 Enter the keys in the WEP Key 1 to WEP Key 4 text boxes.

The number of characters in your key depends on the key length:

	Number of HEX characters	Number of Alphanumeric characters
64-bit key	10	5
128-bit key	26	13

Note: Make a note of the WEP keys so that you can apply them to all Wireless stations on your WLAN.

2 Click **Save**.

Your changes are saved. You must reboot your Wireless AP to apply your changes. Click **Reboot** on the Success page, or continue working in the Wireless Access Point Utility and click Reboot from the Administration page (see page 27) at the end of your session. You do not have to reboot your computer.

Creating Keys With a Passphrase

1 Type in your chosen passphrase.

2 Click **Generate**.

The Wireless Access Point Utility will auto-generate the required keys and set a default key.

> **Note:** Make a note of the WEP keys so that you can apply them to all Wireless stations on your WLAN.

3 Click **Save**.

Your changes are saved. You must reboot your Wireless AP to apply your changes. Click **Reboot** on the Success page, or continue working in the Wireless Access Point Utility and click Reboot from the Administration page (see page 27) at the end of your session. You do not have to reboot your computer.

About Security Authentication Settings

Open System authentication is null authentication. Any station can connect to any Access Point and read all data that is sent in plain text. Set Authentication to Open where performance is the main issue and you have no need for security.

Shared Key authentication provides more security than Open System authentication. In a Shared Key system, your wireless stations and your Wireless AP share a secret encryption/ decryption key that helps prevent unauthorized users from reading your data.

Set your Wireless AP's Security Authentication setting to **Both** to allow Wireless devices with either authentication setting to connect to your Wireless AP.

Filtering MAC Addresses

You can help prevent unauthorized users from accessing your network by enabling MAC address filtering. MAC address filtering lets you specify exactly which Wireless devices can connect to your Wireless AP.

> **Note:** Each Adaptec Wireless device is labelled with its assigned MAC address. The MAC address is exclusive to that device and cannot be altered.

To enable and set up MAC address filtering:

1 Open the Wireless Access Point Utility and log on. (See page 12.)

2 Click the **Security** tab.

3 Click the **Enable Filtering** check box.

A check mark appears showing that this function is enabled, as shown in Step 4 on page 25.

4 In the Add an Address text box, type in the MAC address of any Wireless station allowed to connect to your Wireless AP.

5 Click **Add address**.

The MAC address appears in the Addresses to allow box.

6 Repeat Steps 4 and 5 until all desired MAC addresses are entered.

7 Click **Save**.

Your changes are saved. You must reboot your Wireless AP to apply your changes. Click **Reboot** on the Success page, or continue working in the Wireless Access Point Utility and click Reboot from the Administration page (see page 27) at the end of your session. You do not have to reboot your computer.

To delete a MAC address:

1 In the **Addresses to Allow** box, click on the MAC address.

2 Click **Remove Selected**.

3 Click **Save**.

Your changes are saved. You must reboot your Wireless AP to apply your changes. Click **Reboot** on the Success page, or continue working in the Wireless Access Point Utility and click Reboot from the Administration page (see page 27) at the end of your session. You do not have to reboot your computer.

Changing the Administration Password

By default, no password is set for the Wireless Access Point Utility. However, to increase network security and prevent unauthorized users from accessing your Wireless AP, you should set an Administration password.

To change the Administration password:

1 Open the Wireless Access Point Utility and log on. (See page 12.)

2 Click the **Administration** tab.

3 Type your new password in the top Change Password box, then re-enter it in the box below.

4 Click **Reboot**. (You do not have to reboot your computer.)

Rebooting Your Wireless AP

You must reboot your Wireless AP to apply any changes you've made and saved in the Wireless Access Point Utility.

> **Note:** Rebooting happens within seconds and does not cause your computer to reboot.

To reboot your Wireless AP:

1 Save any setting changes you've made.

2 Click the **Administration** tab.

3 Click **Reboot**.

The updated settings are applied.

Adjusting the Threshold Control Settings

Changes to the Transmit Threshold Control settings (Fragmentation threshold and RTS threshold settings) on the Advanced page can affect overall network performance. Adaptec *highly recommends* that these settings be left at their default values.

Troubleshooting

If you encounter difficulties installing or using your Wireless AP, work through these troubleshooting tips.

If you have difficulties achieving or maintaining a Wireless connection:

- Check to see if radio interference is causing a problem. Move your Wireless adapter away from your microwave oven, 2.4 GHz wireless telephone, baby monitor, or other wireless device.

- Try connecting to your Wireless AP from a shorter distance. Connection range can be as short as 100 feet in poor environments.

If your computer can't locate your Wireless AP:

- Check to see if radio interference is causing a problem. Move your Wireless adapter away from your microwave oven, 2.4 GHz wireless telephone, baby monitor, or other wireless device.

- Try connecting to your Wireless AP from a shorter distance. Connection range can be as short as 100 feet in poor environments.

- Ensure that the Wireless Network ID (SSID) of your Wireless NIC is the same as your Wireless AP's. See *Connecting to the WLAN* on page 14.

- Ensure that if WEP is enabled that the Wireless NIC in your computer and the Wireless Access Point both have identical settings. See *Connecting to the WLAN* on page 14.

- Ensure that the IP addresses of your computer and your Wireless AP are on the same IP network. To set the IP address:

  a Open the Wireless Access Point Utility. (See page 12.)

  b Right-click your Wireless AP and select **Set IP Address**.

  c Click **OK**, then click **Exit**.

- Ensure that the network protocols for your Wireless adapter are installed. Refer to the adapter's documentation for more information.

If the Wireless Access Point Utility does not list your Wireless AP:

Ensure that you are running the Utility on a computer that is wired to the Wireless AP through a network hub or switch, not connected over the Wireless network. If you are accessing the Utility over the WLAN, try connecting your computer to a network hub or switch that is *physically* connected to your Wireless AP.

If your Wireless connection speed is very slow:

Your Wireless devices connect at the highest possible speed, depending on the distance and the environment condition. To increase connection speed, adjust the location and orientation of your Wireless AP. You can also try changing to another channel.

If you click on a tab in the Wireless Access Point Utility and get a message that says that the page cannot be displayed:

Click the **Back** button in your browser, wait several seconds, then try clicking the tab again. You can also try closing the Utility and re-opening it.

About Wireless Technology and LANs

This section provides a very brief, very general overview of Wireless technology and LANs. There are many books and Web sites dedicated to this topic that can provide a more comprehensive explanation.

What's a LAN?

A *network* is a group of computers that are connected together in a way that lets them share and exchange information and resources.

A *Local Area Network*, or LAN, is a network of computers that are in the same general physical location, usually within a building or small group of buildings. Computers on a LAN can share devices such as printers or scanners, they can share and exchange files without using floppy disks or CDs, and they can all use a single Internet connection.

What's a Wireless LAN?

A Wireless LAN (WLAN) uses radio signals instead of cables or wires to connect all the computers in the network.

Adaptec Ultra Wireless products are based on the 802.11b standard for wireless networks.

How Do I Create a Basic WLAN?

A WLAN can be as simple as two computers, each installed with a Wireless Network Interface Card (NIC), such as Wireless USB adapter or Wireless PC card. (This is Ad-hoc Mode.)

You can expand your WLAN to include more computers, and you can incorporate a WLAN into a pre-existing wired LAN by using hubs, Wireless Access Points, Wireless Routers, and additional Wireless NICs. (This is Infrastructure Mode.)

Go to the Adaptec Web site at www.adaptec.com for more information on wireless products.

What About Security?

You have multiple options for adding security to your WLAN. Set security according to the needs of your network.

■ You can limit access to parts of the network by setting passwords and creating special shared files. Refer to your operating system's documentation for more information.

■ You can set up a firewall to protect your network from intrusion by the outside world (over the Internet) by installing a router. Go to the Adaptec Web site at www.adaptec.com for more information on Adaptec's Wireless Router.

■ You can exclude unauthorized users from your WLAN by using the security and encryption features built into your Wireless device. See *Connecting to the WLAN* on page 14 and *Changing the Set-up of Your WLAN* on page 20, and refer to your other Wireless devices' documentation for more details.

Technical Specifications

Standards	IEEE 802.11b compliant
Antenna	Built-in diversity dipole antenna
Frequency Range	■ 2.4 2.4835 GHz (Industrial Scientific Medical Band) ■ DSSS (Direct Sequence Spread Spectrum)
Data Transmission Rate	■ 11 Mbps ■ 5.5 Mbps ■ 2 Mbps ■ 1 Mbps auto fall-back
Access Mode	Infrastructure mode
Data Security	64-bit and 128-bit WEP encryption
Output Power	15 ~ 16.5 dBm
Receiving Sensitivity	-85dBm @ 11Mbps
Roaming	IEEE 802.11 compliant
Channels	■ 11 channels (US, Canada) ■ 13 channels (Europe)
Coverage Area	(Depending on environment) ■ Indoors: up to 50 M (165 ft) @ 11 Mbps; up to 80 M (265 ft) @ Mbps or lower ■ Outdoors: up to 150 M (500 ft) @ 11 Mbps; up to 300 M (1000 ft) @ Mbps or lower
Operating Environment:	
Operating Temperature	0 C to 50 C
Storage Temperature	-25 C to 70 C
Humidity	10% to 90% non-condensing

Glossary

Access Point
An Access Point (AP) is a wired controller that sends data to the wireless NICs installed in your network computers, and receives data back from them. An AP is often connected to the network computer that has Internet access, or is directly connected to a DSL or cable modem. The AP then allows other stations on your WLAN to access the Internet.

Access Point Name
The Access Point Name displayed on the Basic Set-up page of the Wireless Access Point Utility identifies the Wireless AP on a wired network. It has no security function, but makes it easier to identify your Wireless AP.

Ad-hoc mode
See operating mode.

channel
Your Wireless device communicates with other devices on your WLAN over a specific channel. The channel is similar to a radio channel—any Wireless device linking to your Wireless device must be "tuned" to the same channel.

In Infrastructure mode, the channel is selected by the Access Point or Router. It automatically selects a channel from the range available for your geographical location (11 channels are available for use in the United States) and communicates that channel to your Wireless device. In Ad Hoc mode only, you can set the channel yourself.

device driver
A device driver is a software program that lets an adapter (such as a PC card, PCI card, or USB adapter) or any other device (such as a printer or CD-ROM drive) communicate with the computer that it's connected to.

Ethernet
Ethernet is a popular networking system that uses NICs and cables (and often, other networking devices such as bridges and hubs) to create a LAN.

firewall

A firewall is software or a security device that helps prevent unauthorized users from accessing your LAN or WLAN from outside your network (over the Internet). A firewall uses special software that keeps unauthorized users out of your network.

hot-swap

To hot-swap is to remove or attach a device without first shutting off your computer.

hub

A hub works with a computer like a power strip works with an electrical outlet—it multiplies the number of ports you have so that you can have more devices plugged in at the same time.

Infrastructure mode

See operating mode.

LAN

Stands for Local Area Network. LANs are *wired* networks.

LED

Stands for Light-Emitting Diode. LEDs are usually used as status indicators on electronic devices.

MAC address

A Media Access Control (MAC) address uniquely identifies each network device on your network (for instance, your Wireless USB adapter or Wireless Access Point). A MAC address is built into each device, so you can't alter MAC addresses. Normally, a network device is labelled with its assigned MAC address.

network

A network is two or more computers connected so that they can share information, equipment, and programs.

network device

A network device is any device (such as an Access Point or a computer with a NIC) that connects to the network. See also station.

network protocols

Network protocols are rules that determine how devices on a network communicate with each other.

NIC

Stands for Network Interface Card. A Wireless NIC is a computer card (such as a Wireless PCI adapter, Wireless PC card, or Wireless USB adapter) that lets your computer link to a network.

operating mode

Ad-hoc mode (sometimes referred to as peer-to-peer mode) allows two computers to connect only to each other in wireless-to-wireless (or peer-to-peer) communication.

Infrastructure mode is for WLANs that include an Access Point (AP) or Router and multiple computers.

PCI

Stands for Peripheral Component Interconnect. A PCI slot is an expansion slot usually found in Desktop computers.

peer-to-peer mode

See operating mode.

preamble

A preamble is a signal used to synchronize the transmission timing on your WLAN. A series of transmission pulses is sent ahead of the data to signal a new transmission. This ensures that Wireless devices receiving the data correctly interpret when the transmission starts.

SSID

See Wireless Network ID.

station

A station is any device (including notebooks, PCs, and handheld devices) with 802.11 Wireless capability. See also network device.

transfer rate

The transfer rate is the speed at which your Wireless device is sending data. It is expressed in megabits per second (Mbps). The default transfer rate setting, Auto Rate (or Automatic), allows your Wireless device to automatically adjust its transfer speed for optimal performance and the longest operating range. Adaptec recommends that whenever possible, you maintain the Auto Rate setting.

However, if your Wireless device's transfer rate changes frequently, you can set a lower transfer rate to achieve a more stable connection. The fixed rate speed options are 11Mbps (the highest rate), 5.5Mbps, 2Mbps, 1 or 2 Mbps, or 1 Mbps.

USB

Stands for Universal Serial Bus. USB is the interface between your computer and the USB devices you plug into it.

WEP

Wired Equivalent Privacy (WEP) is a security feature that provides confidentiality (by encrypting the data being sent over the radio waves of your WLAN) and authentication (by using a shared key between two wireless devices).

WEP key

WEP keys control encryption.

WEP keys can be numeric, alphabetic, or a combination of both. You can choose between Hexadecimal, which restricts you to numbers 0–9 and letters A–F, and Alphanumeric, which restricts you to numbers 0–9 and letters a–z/A–Z.

Alphanumeric WEP keys are case-sensitive.

The number of characters in your key depends on the key length:

	Number of HEX characters	Number of Alphanumeric characters
64-bit key	10	5
128-bit key	26	13

Wireless device
A Wireless device (or Wireless network device) is any Wireless device that connects to the network. See also network device.

Wireless Network ID
The Wireless Network ID (also referred to as the SSID) is like a secret code that your Access Point and your Wireless devices share to prevent unauthorized users from accessing your WLAN. Your Wireless devices can only connect to your Access Point if they have the same SSID as the Access Point. Wireless devices in Ad-hoc mode must be set to the same SSID.

The Wireless Network ID is case-sensitive and must not exceed 32 characters.

WLAN
Stands for Wireless Local Area Network. WLANs are use radio signals instead of wires to connect network stations.

WLAN station
See station.